

Atty. Dkt. No.  
033035M0342

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Kensaku Motoki, et al.  
Serial No.: To Be Assigned Art Unit: To Be Assigned  
Filed : Herewith Examiner: To Be Assigned  
For : GaN SINGLE CRYSTAL SUBSTRATE AND METHOD  
: OF MAKING THE SAME

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. § 1.56, Applicants are enclosing an Information Disclosure Citation Form (PTO-1449).

These documents were cited by the Examiner and the Applicants during prosecution of the predecessor application 09/560,818 filed April 28, 2000. No copies of the documents are necessary in accordance with 37 C.F.R. §1.98(d).

Applicants respectfully ask that each of these documents be made officially of record in this application, and that a listing of the same appear on the face of any patent which may issue from this application.

Respectfully submitted,  
SMITH, GAMBRELL & RUSSELL, LLP

By: 

Michael A. Makuch, Reg. No. 32,263  
1850 M Street, N.W., Suite 800  
Washington, D.C. 20036  
Telephone: (202) 263-4300  
Facsimile: (202) 263-4329

October 24, 2003

<b>FORM PTO-1449</b>  <b>INFORMATION DISCLOSURE STATEMENT</b>  <i>(Use several sheets if necessary)</i>	<b>ATTY. DOCKET NO.</b> 33035M0342	<b>SERIAL NO.</b> To Be Assigned
	<b>APPLICANTS:</b> Kensaku Motoki, et al.	
	<b>FILING DATE</b> Herewith	<b>GROUP ART UNIT</b> To Be Assigned

### U.S. Patent Documents

Examiner Initials		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE, IF APPROPRIATE
	AA	4,727,047	2/1988	Bozler, et al.			
	AB	6,225,650	5/2001	Tadatomo et al.			
	AC	5,843,227	12/1998	Kimura et al.			
	AD	5,846,609	12/1998	Shiralagi			
	AE	6,087,681	7/2000	Shakuda			
	AF	6,096,130	8/2000	Kimura			
	AG	6,156,581	12/2000	Vaudo et al.			

### FOREIGN PATENT DOCUMENTS

*Examiner's Initials		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION	
							YES	NO
	AD	09-194299	7/29/97	Japan			Abstract	
	AE	8-116090	5/7/96	Japan			Abstract	
	AF	9-255496	9/30/97	Japan			Abstract	
	AG	7-273048	10/20/95	Japan			Abstract	
	AH	51-50899	5/4/76	Japan			X	
	AI	10-265297	10/6/98	Japan			Abstract	
	AJ	10-312971	11/24/98	Japan			Abstract	
	AK	10-326751	12/8/98	Japan			Abstract	
	AL	10-321529	12/4/98	Japan			X	
	AM	09-255496	9/30/97	Japan			Abstract	

### OTHER INFORMATION (Including Author, Title, Date, Pertinent Pages, Etc.)

AN	
----	--

<b>EXAMINER</b>	<b>DATE CONSIDERED</b>
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

<b>FORM PTO-1449</b>  <b>INFORMATION DISCLOSURE STATEMENT</b>  <i>(Use several sheets if necessary)</i>	ATTY. DOCKET NO. 33035M0342	SERIAL NO. To Be Assigned
	APPLICANTS: Kensaku Motoki, et al.	
	FILING DATE Herewith	GROUP ART UNIT To Be Assigned

**U.S. Patent Documents**

Examiner Initials		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE, IF APPROPRIATE
	AA						
	AB						

**FOREIGN PATENT DOCUMENTS**

*Examiner's Initials		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO	
	AC							
	AD							

**OTHER INFORMATION** (Including Author, Title, Date, Pertinent Pages, Etc.)

	AE	Chinese Office Action mailed June 20, 2003.
	AF	U. Akira et al. "Thick GaN Epitaxial Growth With Low Dislocation Density by Hydride Vapor Phase Epitaxy" Japanese Journal of Applied Physics, 15 July 1997, Part. 2, Vol. 36, No. 7B, pp. L899-L902.
	AG	S. Akira et al. "Defect Structure in Selectively Grown GaN Films With Low Threading Dislocation Density" Applied Physics Letters, 20 October 1997, Vol. 71, No. 16, pp. 2259-2261.
	AH	H. Shima et al. "Selective Growth of GaN on Submicron Pattern by MOVPE (in Japanese)" Technical Report of IEICE, Vol. 97, No. 61, 23 May 1997 (Tokyo), pp. 41-46.
	AI	T. Shibata et al. "Preparation of High-Quality GaN Bulk Single Crystal by Selective HVPE Growth (in Japanese)", Technical Report of IEICE, Vol. 97, No. 61, 23 May 1997 (Tokyo), pp. 35-40.
	AJ	K. Shota et al. "Fabrication of GaN Hexagonal Pyramids on Dot-Patterned GaN/Sapphire Substrates Via Selective Metalorganic Vapor Phase Epitaxy" Japanese Journal of Applied Physics, 15 September 1995, Part 2, Vol. 34, No. 9B, pp. L1184-L1186.
	AK	International Preliminary Examination Report (PCT/IPEA/409) (translated) for J PCT/JP98/04908.
	AL	International Search Report for PCT/JP98/04908.
	AM	Cover page of WO99/23693.
	AN	Forms PCT/IB/304 and PCT/IB/308.
	AO	Korean Office Action mailed April 23, 2003

EXAMINER	DATE CONSIDERED
<b>*EXAMINER:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	